

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
**ROCHE ET AL.**

Serial No. **Not Yet Assigned**

Filing Date: **Herewith**

For: **MICROPROCESSOR COMPRISING  
INPUT MEANS IN THE TEST MODE**

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DATE OF DEPOSIT: November 27, 2001

NAME: Dawn Kimler

SIGNATURE: Dawn Kimler

PRELIMINARY AMENDMENT

Director, U.S. Patent and Trademark Office  
Washington, D.C. 20231

Sir:

Prior to the calculation of fees and examination of  
the present application, please enter the amendments and  
remarks set out below.

In the Drawings:

Submitted herewith is a request for a proposed  
drawing modification as indicated in red ink to label FIG. 1  
as prior art.

In the Claims:

Please cancel Claims 1 to 14.

Please add new Claims 15 to 44.

15. A microprocessor comprising:

a first terminal for receiving a mode selection  
signal;

a second terminal for receiving a control signal;

In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

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and

selection means connected to the first and second terminals for selecting an operating mode of the microprocessor based upon the mode selection signal and the control signal, said selection means comprising

a counter having a counting input and a reset input,

first coupling means coupling the counting input to the first terminal,

second coupling means coupling the reset input to the second terminal, and

default means for maintaining by default the reset input at a first logic value for ensuring that said counter is maintained at zero in an absence of the control signal.

16. A microprocessor according to Claim 15, wherein said default means is internal to the microprocessor.

17. A microprocessor according to Claim 15, wherein said default means is external to the microprocessor.

18. A microprocessor according to Claim 15, wherein said default means comprises a bias resistor.

19. A microprocessor according to Claim 15, wherein said second coupling means comprises a second logic circuit having an output coupled to the reset input of said counter, a first input coupled to the second terminal, and a second input for receiving an inhibit signal for inhibiting the output of the said second logic circuit when the first input receives

In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

---

the control signal outside a selection period for selecting an operating mode of the microprocessor.

20. A microprocessor according to Claim 19, wherein the inhibit signal is a reset signal of the microprocessor.

21. A microprocessor according to Claim 20, wherein said second logic circuit comprises:

an inverter having an input for receiving the reset signal; and

an AND-gate having a first input connected to the second terminal, and a second input connected to an output of said inverter.

22. A microprocessor according to Claim 15, further comprising:

a decoder connected to an output of said counter for delivering at least one mode bit, with a value of each mode bit being based upon a counting result delivered by said counter; and

a central processing unit connected to an output of said decoder for receiving the at least one mode bit.

23. A microprocessor according to Claim 15, wherein said first coupling means comprises a first logic circuit having an output coupled to the counting input of said counter, a first input coupled to the first terminal, and a second input for receiving an inhibit signal for inhibiting the output of the said first logic circuit when the first input receives the mode selection signal outside a selection period for selecting an operating mode of the microprocessor.

In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

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24. A microprocessor according to Claim 15, wherein the operating mode is a test mode or a servicing mode requiring application of a predetermined number of pulses to the counting input of said counter during a selection period for selecting the operating mode of the microprocessor.

25. A microprocessor according to Claim 15, wherein the first and the second terminals are used as input/output ports of the microprocessor when the microprocessor is operating outside a selection period for selecting the operating mode thereof.

26. A microprocessor comprising:  
a first terminal for receiving a mode selection signal;  
a second terminal for receiving a control signal;  
and

a selection circuit connected to the first and second terminals for selecting a mode of the microprocessor based upon the mode selection signal and the control signal, said selection circuit comprising

a counter having a counting input and a reset input,

a first coupling circuit coupling the counting input to the first terminal,

a second coupling circuit coupling the reset input to the second terminal, and

a device for maintaining the reset input at a first logic value for ensuring that said counter is maintained at a predetermined value in an absence of the control signal.

In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

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27. A microprocessor according to Claim 26, wherein said device comprises a bias resistor connected internal to the microprocessor.

28. A microprocessor according to Claim 26, wherein said device comprises a bias resistor connected external to the microprocessor.

29. A microprocessor according to Claim 26, wherein said second coupling circuit has an output coupled to the reset input of said counter, a first input coupled to the second terminal, and a second input for receiving an inhibit signal for inhibiting the output of the said second logic circuit when the first input receives the control signal outside a selection period for selecting a mode of the microprocessor.

30. A microprocessor according to Claim 29, wherein the inhibit signal is a reset signal of the microprocessor.

31. A microprocessor according to Claim 30, wherein said second coupling circuit comprises:

an inverter having an input for receiving the reset signal; and

an AND-gate having a first input connected to the second terminal, and a second input connected to an output of said inverter.

32. A microprocessor according to Claim 26, further comprising:

a decoder connected to an output of said counter for

In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

---

delivering at least one mode bit, with a value of each mode bit being based upon a counting result delivered by said counter; and

a central processing unit connected to an output of said decoder for receiving the at least one mode bit.

33. A microprocessor according to Claim 26, wherein said first coupling circuit comprises a first logic circuit having an output coupled to the counting input of said counter, a first input coupled to the first terminal, and a second input for receiving an inhibit signal for inhibiting the output of the said first coupling circuit when the first input receives the mode selection signal outside a selection period for selecting a mode of the microprocessor.

34. A microprocessor according to Claim 26, wherein the mode is a test mode or a servicing mode requiring application of a predetermined number of pulses to the counting input of said counter during a selection period for selecting the mode of the microprocessor.

35. A microprocessor according to Claim 26, wherein the first and the second terminals are used as input/output ports of the microprocessor when the microprocessor is operating outside a selection period for selecting the mode thereof.

36. A method for selecting an operating mode of a microprocessor comprising a counter having a counting input and a reset input, and a first coupling circuit coupling the counting input to a first terminal of the microprocessor, and

In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

---

a second coupling circuit coupling the reset input to a second terminal of the microprocessor, the method comprising:

driving the counting input with a mode selection signal applied to the first terminal of the microprocessor;

driving the reset input by a control signal applied to the second terminal for activating the counter; and

maintaining by default the reset input at a first logic value for ensuring that the counter is maintained at a predetermined value in an absence of the control signal.

37. A method according to Claim 36, wherein the maintaining by default is accomplished using a bias resistor internal to the microprocessor.

38. A method according to Claim 36, wherein the maintaining by default is accomplished using a bias resistor external to the microprocessor.

39. A method according to Claim 36, wherein the second coupling circuit has an output coupled to the reset input of the counter, a first input coupled to the second terminal, and a second input; the method further comprising applying an inhibit signal to the second input for inhibiting the output of the second logic circuit when the first input receives the control signal outside a selection period for selecting an operating mode of the microprocessor.

40. A method according to Claim 39, wherein the inhibit signal is a reset signal of the microprocessor.

41. A method according to Claim 36, wherein the mode

In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

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selection signal includes a predetermined number of pulses;  
the further comprising:

using the counter for counting the number of pulses  
in the mode selection signal;

generating at least one mode bit based upon the  
number of pulses counted; and

delivering the at least one mode bit to a central  
processing unit.

42. A method according to Claim 36, wherein the  
first coupling circuit has an output coupled to the counting  
input of the counter, a first input coupled to the first  
terminal, and a second input; the method further comprising  
applying an inhibit signal to the second input for inhibiting  
the output of the first coupling circuit when the first input  
receives the mode selection signal outside a selection period  
for selecting an operating mode of the microprocessor.

43. A method according to Claim 36, wherein the  
operating mode is a test mode or a servicing mode requiring  
application of a predetermined number of pulses to the  
counting input of the counter during a selection period for  
selecting the operating mode of the microprocessor.

44. A method according to Claim 36, wherein the  
first and the second terminals are used as input/output ports  
of the microprocessor when the microprocessor is operating  
outside a selection period for selecting the operating mode  
thereof.



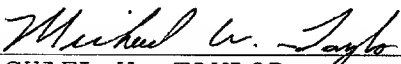
In re Patent Application of:  
**ROCHE ET AL.**  
Serial No. **Not Yet Assigned**  
Filed: **Herewith**

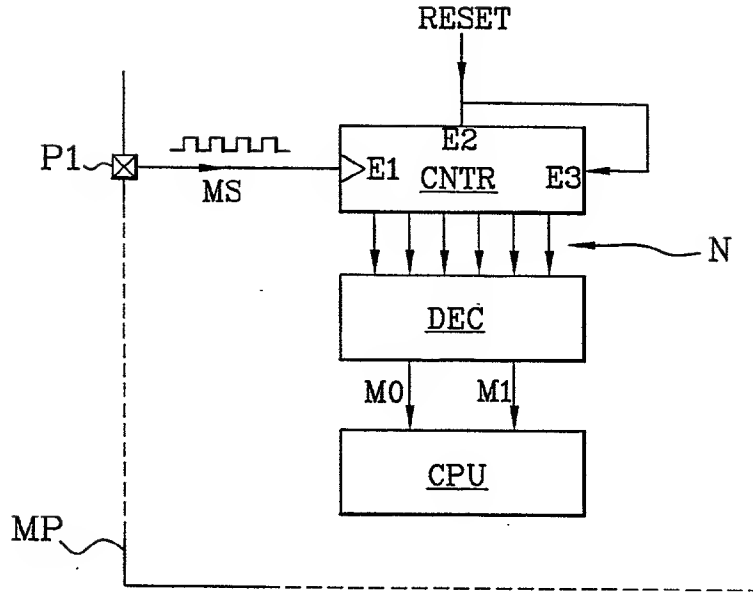
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**REMARKS**

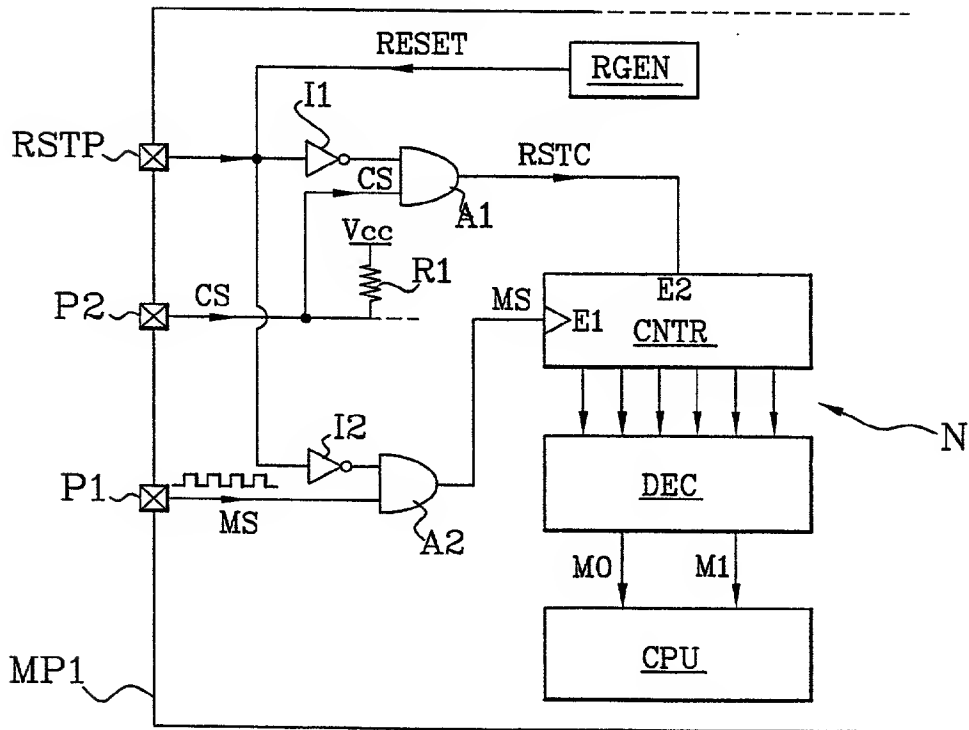
It is believed that all of the claims are patentable over the prior art. For better readability and the Examiner's convenience, the newly submitted claims differ from the translated counterpart claims which are being canceled. The newly submitted claims do not represent changes or amendments that narrow the claim scope for any reason related to the statutory requirements for patentability. Accordingly, after the Examiner completes a thorough examination and finds the claims patentable, a Notice of Allowance is respectfully requested in due course. Should the Examiner determine any minor informalities that need to be addressed, he is encouraged to contact the undersigned attorney at the telephone number below.

Respectfully submitted,

  
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**Fig. 1**  
(PRIOR ART)



**Fig. 2**